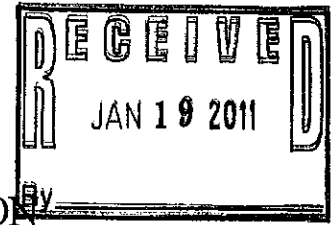




STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY



January 13, 2011

**To:** Earl Lewellyn P.E.  
Kimley-Horn and Associates, Inc.  
102 City Hall Plaza, Suite 201  
Durham, NC 27701

**Subject:** Proposed Erwin Square Apartment Development Traffic Impact Analysis

The proposed Erwin Square Apartment Development, prepared for Crescent Resources, LLC, is located between US 70 Business (Hillsborough Road) and Main Street, approximately 600 feet west of Ninth Street in Durham County, North Carolina. The site is likely to consist of approximately 310 apartment units with an anticipated build-out year of 2012 and analysis year of 2013. According to the TIA, the proposed development is projected to generate unadjusted volumes of 2004 daily trips with 156 A.M. peak hour site trips and 188 P.M. peak hour site trips.

**The TIA analyzed the following seven (7) intersections:**

- Main Street and Anderson Street/Fifteenth Street – Signalized
- Main Street and North-South Spine Street – Unsignalized
- Main Street and SR 1320 (Erwin Road)/Ninth Street – Signalized
- Main Street and Existing Eastern Site Drive – Unsignalized
- US 70 Business (Hillsborough Road) and North-South Spine Road – Unsignalized
- US 70 Business (Hillsborough Road) and Ninth Street/Markham Avenue – Signalized
- Safeway Street and Ninth Street – Unsignalized

**Approved Surrounding Developments**

**1. Ninth Street North (Phase One and Two)**

The proposed development is located on Ninth Street and Iredell Street, between Green Street and Hillsborough Road / West Markham Avenue. The proposed development will consist of 37,707 square feet of retail space, 76,853 square feet of general office space, and 145 apartment units at full build-out with an anticipated build-out year of 2015. Phase one is proposed to consist of 19,707 square feet of retail space, 7,200 square feet of general office space, and 145 apartment units and phase two is proposed to consist of an additional 18,000 square feet of retail space and 69,653 square feet of general office space.

**2. Hilton Garden Inn**

According to the TIA, the proposed development is located in the northeast of the Main Street – North – South Spine Road intersection. Traffic for the development was generated based on the ITE Trip Generation methodology and distributed onto the street network based on a review of the existing traffic counts and area origins and destinations.

### **TIP Roadway Improvement Projects Relevant to Proposed Development**

There are currently no funded TIP projects in the study area.

### **Trip Generation and Distribution**

- 5% to/from the east via SR Markham Avenue
- 35% to/from the east via Main Street
- 10% to/from the west via Hillsborough Road
- 10% to/from the west via Main Street
- 5% to/from the north via Ninth Street
- 35% to/from the south via Anderson Street

### **Capacity Analysis for Existing and Future Conditions**

- Existing (2010) Conditions
- Projected (2013) No-Build Conditions (Existing traffic + 1.0 % Background Growth + Approved Developments)
- Projected (2013) Build Conditions (Projected No Build + Site Traffic With Improvements)

### **Summary of Road Improvements**

The Department has reviewed the preliminary site plan and Traffic Impact Analysis (TIA) for the Erwin Square Apartments Development prepared by Kimley Horn and Associates Inc., (Sealed and dated November 4, 2010). In order to accommodate the site-generated traffic safely and efficiently, while also attempting to protect the functional integrity and operational capacity of the adjacent roadway facilities, we recommend the following improvements and/or restrictions related to this development. Any additional changes to the site plan must be submitted in writing to the District Office.

### **Main Street and Anderson Street/Fifteenth Street Intersection**

No future geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

### **Main Street and North-South Spine Street Interchange**

No future geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

### **Main Street and SR 1320 (Erwin Road)/Ninth Street Intersection**

No future geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

### **Main Street and Existing Eastern Site Drive Intersection**

No future geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

### **Main Street and Existing Eastern Site Drive Intersection**

No future geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

### **US 70 Business (Hillsborough Road) and North-South Spine Road Intersection**

No future geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

**US 70 Business (Hillsborough Road) and Ninth Street/Markham Avenue Intersection**

No future geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

**Safeway Street and Ninth Street Intersection**

No future geometric improvements are necessary at this intersection at this time to mitigate site-generated traffic.

**General**

Cross-access to adjacent properties is strongly encouraged to reduce repetitive trips and provide future alternative routes of ingress/egress.

Due to, but not limited to, the comments and recommendations from this review of the proposed developments, changes in the internal circulation may be necessary to ensure that driver confusion is minimized to the maximum extent possible.

Any signal revisions, modifications, or additions necessitated by the development should be coordinated with the Regional Traffic Engineer, the Division Traffic Engineer, the Signals and Geometrics Section and the City of Durham.

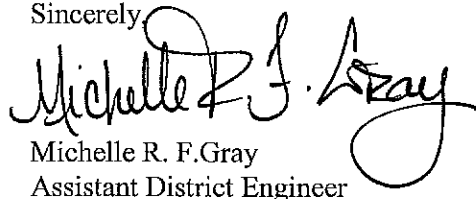
Any pavement marking revisions/modifications necessitated by the development should be the responsibility of the developer and coordinated with the Division Traffic Engineer.

Any roadway modifications or improvements necessitated by the development should be the responsibility of the developer unless otherwise noted.

Reference should also be made to the information included in the "General Recommendations Attachment."

NCDOT driveway permits will not be required for any new driveway accesses on. If we can provide further assistance, please contact me at (919) 220-4750.

Sincerely,

  
Michelle R. F. Gray  
Assistant District Engineer

Attachment

cc: Mr. H. Wesley Parham, P.E.

**General Recommendations Attachment**  
(For Erwin Square Apartments Development)

Adequate horizontal and vertical sight distances should be reserved at all proposed entrances. Foliage that interferes with sight distance should be cut back to protect lines of sight. The District Engineer should determine if all drainage facilities are adequate. Curb cuts and curb ramps should be constructed in conformance with the "*Guidelines for Curb Cuts and Ramps for Disabled Persons*," if applicable.

The developer may be required to obtain an approved encroachment agreement covering proposed work within the state right-of-way. If this is the case, the encroachment should be cross-referenced to this review.

All street and driveway entrances onto state system roadways should be controlled with appropriate traffic control devices, including but not limited to, stop, yield, directional, regulatory, and advisory signs and pavement markings. All traffic control devices shall conform to the requirements set forth in the Manual on Uniform Traffic Control Devices. Final pavement marking and signing plans should be submitted to the Division Traffic Engineer for approval prior to the installation of any signs and/or pavement markings.

Unless otherwise noted, a recommended width of 40 feet (curb face to curb face) should be used at each drive. It is also recommended that 40 feet (minimum) radii should be used at each drive to accommodate any service type vehicles or truck traffic that may visit the site.

If the developer anticipates adding or petitioning for addition to the state system, all roads/streets should be designed and constructed in conformance with the current North Carolina Department of Transportation design and construction guidelines.

All "outparcels" or "excluded areas" should be served internally with no additional access onto abutting roadways. The developer should convey this condition in any lease or sell agreements.

As required by the "*Policy on Street and Driveway Access to North Carolina Highways*," dated July 2003, the applicant is responsible for identifying all right-of-way and/or control-of-access limits and for including this information on all submittals. Failure to accurately disclose R/W and C/A limits could result in the denial or closure of access points.

Adequate right-of-way for widening and sight distance triangles should be reserved. Any additional development, either within this site or adjacent to this site, that intends on using the developments access will require an updated driveway permit and re-evaluation of geometric and traffic control needs

Any additional development, either within this site or adjacent to this site, that intends on using this development's access will require an updated driveway permit and re-evaluation of geometric and traffic control needs.

All widening should include appropriate transitional and deceleration tapers. Recommended turn lane and transitional treatments are shown on pages 78 and 79 of the "*Policy on Street and Driveway Access to North Carolina Highways*," dated July 2003.

Where possible, opposite side driveways should be aligned to prevent the operational and safety problems caused by offset driveways.